WHAT IS CLAIMED IS:

1. A medical device (10) comprising a tube (11), wherein the tube (11) comprises:

a coil (14) in a stressed, radially expanded condition;

a braid (16) extending over at least part of the coil (14); and

a polymeric layer (18) positioned over and contacting at least the coil (14);

the polymeric layer (18) maintaining the coil (14) in its stressed, radially expanded condition.

2. The medical device (10) according to claim 1, wherein the polymeric layer (18) maintains the coil (14) in its stressed, radially expanded condition by adhesion to the coil (14).

3. The medical device (10) according to claim 1, further comprising an inner liner (20) beneath and in contact with at least part of the coil (14).

4. The medical device (10) according to claim 1, wherein at least one of the coil (14) and the braid (16) comprises a metal.

5. The medical device (10) according to claim 1, wherein the braid (16) comprises a plurality of crossed wires (22).

6. The medical device (10) according to claim 5, wherein the wires (22) are circular in cross-section.

7. The medical device (10) according to claim 1, wherein the coil (14) comprises flat wire.

8. The medical device (10) according to claim 1, wherein the polymeric layer (18) comprises at least one of nylon, polyurethane and PTFE.

9. The medical device (10) according to claim 8, wherein the polymeric layer (18) is encased within an additional layer of heat-shrinkable tubing.

10. The medical device (10) according to claim 2, wherein the polymeric layer (18) is thermally bonded to the coil (14).

11. The medical device (10) according to claim 3, wherein the inner liner (20) comprises PTFE.

12. The medical device (10) according to claim 1, wherein the tube (11) has an outer diameter no greater than about 2 mm.

13. The medical device (10) according to claim 1, wherein the coil (14) extends distally beyond the braid (16).

14. The medical device (10) according to claim 1, wherein the polymeric layer (18) comprises at least two discrete longitudinal segments (28 and 30) of differing durometer.

15. The medical device (10) according to claim 1, wherein the device (10) is an endoscope (32), and wherein the tube (11) is configured as an endoscope sheath (34).

16. The medical device (10) according to claim 1, wherein the device (10) is a single lumen balloon catheter (38), and wherein the tube (11) is configured as a catheter shaft (40).

17. The medical device (10) according to claim 16, wherein the tube (11) has a lumen (60) defined longitudinally therethrough, and wherein the device (10) further comprises an inflatable balloon (44) mounted to the tube (11),

the balloon (44) having an interior (58) in fluid communication with the tube lumen (60).

18. The medical device (10) according to claim 17, wherein the tube (11) has a distal end (42) comprising a valve seat (46), and wherein the device (10) further comprises an occluder (48) positioned in the tube lumen (60) and moveable therein, the occluder (48) having a tip (50) engageable with the valve seat (46) of the distal tube end (42) to seal the distal tube end (42) and permit inflation of the balloon (44).

19. A medical device (10) comprising a tube (11), wherein the tube (11) comprises:

a metal coil (14) in a stressed, radially expanded condition, the metal coil (14) comprising flat wire;

a metal braid (16) extending over at least part of the coil (14);

a polymeric bonding layer (18) positioned over and contacting at least the coil (14), wherein the polymeric layer (18) is heat-shrinkable tubing comprising at least one of nylon, polyurethane and PTFE; and

an inner liner (20) beneath and in contact with at least part of the coil (14), the liner (20) comprising PTFE;

wherein the polymeric layer (18) maintains the coil (14) in its stressed, radially expanded condition by adhesion to the coil (14) by thermal bonding to it; and

wherein the tube (11) has an outer diameter no greater than about 1 mm.

20. The improvement in a medical device (10) including a tube (11), characterized in that the tube (11) comprises:

a coil (14) in a stressed, radially expanded condition;

a braid (16) extending over at least part of the coil (14); and

a polymeric layer (18) positioned over and contacting at least the coil (14);

wherein the polymeric layer (18) maintains the coil (14) in its stressed, radially expanded condition.

21. A tube (11) for use with a medical device (10), the tube (11) comprising a coil (14) in a stressed, radially expanded condition; a braid (16) extending over at least part of the coil (14), and polymeric material (18) positioned at least over the coil (14); the polymeric material (18) at least in part maintaining the coil (14) in its stressed, radially expanded condition.